Stochastic

11/10/2015 الأحد م. جمال ستكشم 1

Q1: $S = \{1, 2, 3, 4, 5, 6\}$

E_1 = Even Number

$E_1 = \{2, 4, 6\}$

$P(E_1) = P(2) + P(4) + P(6)$

$= 1/2$

Q2:

Sample point	Probability
HH	4/9
HT	2/9
TH	2/9
TT	1/9

A = exactly one head.

$= \{HT, TH\}$

$P(A) = 4/9$

B = at least one head

$B = \{HH, TH, HT\}$

$P(B) = 8/9$

$A \cap B = \{TH, HT\}$

$P(A \cap B) = 4/9$

$A \cup B = \{TH, HT, HH\}$

$P(A \cup B) = 8/9$

Q6:

A: at least one head

$A^c = \{T\,T\,T\,T\,T\,T\,T\,T\,T\,T\}$

$P(A^c) = \frac{1}{1024}$

$P(A) = 1 - \frac{1}{1024}$

$= \frac{1023}{1024}$

Q5:

Mother's Age	White ↓(A)	Black
≤17	2%	2%
18-19	3%	2%
20-28	41%	12%
≥30	33%	5%

$S = \{(\leq 17, w), (\leq 17, B), (18\text{-}19, w), (18\text{-}19, B), (20\text{-}28, w), (20\text{-}28, B), (\geq 30, w), (\geq 30, B)\}$

$A = \{(\leq 17, A), (18\text{-}19, w), (20\text{-}28, w)(\geq 30, w)\}$

$B = \{(\leq 17, w), (\leq 17, B), (18\text{-}19, w)(18\text{-}19, B)\}$

$P(A) = 0.79$ $P(B) = 0.09$